THE DIFFICULTIES OF CONTROL AS ILLUSTRATED IN THE HISTORY OF GAS COMPANIES.

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One of the most striking things in the political, industrial, and administrative development in America, is the fact that conditions grow up, develop, and press for a solution long before the most advanced thinker has worked out any theory of how to deal with them.

We are in an age of marked increase and concentration of machinery and industry under corporate management. So long as we expect to make material progress, we must apparently not only expect this movement to continue, but also to increase in intensity. The size, too, of the individual corporation is likely to grow.

We have discovered no other form of voluntary organization capable of carrying the world's progress forward. Whatever may be said of government socialism as a remedy, it is not likely, in our day, to drive all the public-service corporations from the field, or even to do away with the particular kind of corporation now under discussion.

If, then, the privately owned corporations have come to stay, what can we do to lessen and curb the unmistakable evils connected with them, at the same time that we render more satisfactory the service furnished by them, and encourage private enterprise?

Let us confine our attention at present to the gas industry. In the first place, we are fortunate in the kind of corporation selected. Whether we consider the question historically or theoretically, the incorporated gas company presents almost every interesting phase of what is known as the corporation problem.

Artificial illuminating gas is now about to enter upon its second century. Within recent years, three important competitors have entered the field; namely, petroleum, natural gas, and electricity. Nevertheless, artificial gas remains to-day, for the great majority of city dwellers, the most widely-used, the cheapest, and the safest means of both public and private lighting.

The supply of this service is recognized to-day by all competent students, if not by all voters and legislators, as one of the most perfect types of what are known as natural monopolies. The gas company usually requires, in addition to a franchise, a special local license for the use of the streets. When installed, the corporation comes perhaps into closer contact with both the individual consumer and the municipal government than almost any other corporation enjoying special privileges in the streets. Both the manufacture and distribution of gas are highly technical operations, requiring a considerable degree of skill. Of the cost or methods of these operations, the average consumer, under present conditions, can know nothing. The fluctuations in the price of materials, and the constant improvements in methods and processes of manufacture add to this difficulty. In fact, to say nothing of cost, the consumer is unable to determine for himself even the quality, purity, and safety of the article offered him. Some idea of the rapidity and wide-reaching influence of these changes can be seen if we recall the fact that within a period of about twenty years, one complete revolution in method of manufacture (involving almost a complete change in major and minor materials) has been wrought; while within the last five years changes have been introduced which those in control of the processes, believe will, in the immediate future, work a still greater revolution than that brought about by the introduction of water gas. This process involves a return to bituminous coal as the chief material, but by a change of method the gas becomes no longer the chief product or aim of the operation, but

merely the joint, and minor, or by-product, of a coke manufacturing plant.

It is, in my opinion, altogether too early to predict the outcome of the attempt to distribute coke-oven gas over great areas from a central plant. But we should not lose sight of the fact that the venture is in the hands of men powerful—both intellectually and financially; and, that the experiment has already gone far enough to call forth a large investment of fixed capital. This investment has, of course, already deeply affected the securities of the old companies in that vicinity; while the pressure for privileges for the coke-oven experiment, now in progress at Everett, caused the legislature of conservative Massachusetts to reverse entirely the policy of the state in regard to public-service corporations.

If anything further were necessary to prove that the gas companies are typical of the problems now uppermost in the public mind, a mere reference to the fact that the Bay State Gas Company of Delaware—of which more hereafter—a financial company organized chiefly to recapitalize the surplus of the Boston companies, has authorized an increase of its nominal capital, within a short time, to $1,000,000,000—the largest nominal capitalization ever reached in the whole history of joint-stock companies.

So long as such changes in the industry as have taken place in the last two decades are in progress, or are even seriously anticipated, control of the companies, while all the more imperative, is doubly difficult to obtain with our weak condition of government. For, until the honest and well-meaning, but uninformed, voter has thoroughly discarded his instinctive faith in competition in this industry, any shrewd and unscrupulous manipulator who can get possession of patents for supposed improvements, can blackmail existing companies. Any refusal on the part of the old company to pay the tribute demanded by the holders of these patents, whether the patents promise to be useful or

not, means, in the present condition of public opinion, simply the introduction of a competing company, with its inevitable burdens for the consumers. This is all the more true so long as public opinion can be so easily manipulated.

So far a company has had to count on frequent attacks of this kind from the enemy, and has tried to adjust its income to meet them. But to do this it is necessary for it to keep all of its affairs as secret as does an army in the face of the enemy.

This is the key to the situation; and whatever policy of the state towards these corporations will tend most effectively to educate the voter as to the true nature of the companies and their business, is the best policy. It ought to be needless to say that until the average voter is much better informed in regard to the complexity and scientific needs of government and industry, public ownership will not bring about the desired results. It is safe to say that we have no governments to-day, state or local, capable of dealing satisfactorily with existing evils under any form of ownership or control, and that we shall have none until the mixed population of our cities realizes that non-partisanship, permanency of tenure, and high scientific qualification are requisite to successful administration of government, and especially to the successful public control of corporations.

This is perhaps as important a question as any with which the American public has ever had to deal. It should not escape observation that, in addition to being corporations liable to all the ills to which such bodies corporate are subject, these particular corporations operate almost entirely in the cities, and in a very important sense in the great cities, and thus touch the whole question of local and municipal government. It is doubtful if any considerable improvement in city government can be rationally looked for unless preceded by, or at least accompanied by, an improvement in the kind of corporation under consideration and in its relation to the public. The marvelous development of our cities

and our material resources in general, with the necessary haste and pressure accompanying it, has caused a general neglect of public affairs and, at the same time, has allowed evils in the management of public-service corporations to become truly gigantic before any unified body of knowledge grows up, and before public sentiment can be created and concentrated upon the evils. Above all, this haste, confusion, and absence of any principle of action has prevented effective public demand that the state should make any serious attempt to enforce even its common law right of supervision over corporations, or that it should reserve in the act of incorporation the additional statutory powers necessary to effectual control under modern complex conditions. Thus it is that the companies have in practice been able to maintain almost universal secrecy. They were allowed to run wild for so many years that they actually came to despise the state that created them, and to believe that this creator had no moral or legal power over them. If their beliefs did not go so far as this, their practice extended at least to a virtual denial of the right of the state to enforce even the rights expressly reserved to it by the charter. The managers went so far at one time as to claim that all knowledge of the affairs of the companies not only of right belonged exclusively to them, but also that such knowledge, if imparted, could have but little interest or value for any one else.

This chaotic condition lasted in the older states until after the Civil War, and has not yet disappeared from many portions of the country. There being during this period no popular or legislative appreciation of the monopolistic character of the industry, there is scarcely an important city in the United States—outside of Massachusetts, whose companies will receive special attention presently—in which rival gas companies have not, at one time or another, waged war upon one another. Partly from ignorance, partly from simple yielding to popular prejudice and clamor to catch

votes, the legislatures of all the more important states have, from time to time, passed prohibitory and penal statutes against the companies. But in no single instance, with the exception of Massachusetts already noted, has any effective machinery or organ of government been established to enforce the prohibitions and penalties. In many cases the language of the statutes was itself unintelligible. The principal ostensible object of the legislation of this period was to secure a safe gas, of good quality, at a fair price, by preventing excessive capitalization and excessive earnings. But all this legislation failed miserably because of the weakness, or complete lack, of administrative machinery to find what the companies were actually doing. Nothing was more common a generation ago, than for the charter to require a company to furnish a "good gas," or "as good gas" as some other company named, without any definition whatever of the phrase "a good gas" in the case of either company. From time to time the provision took a great variety of forms, all with the same vital weakness. No effective steps were taken in any of these cases to test the purity or illuminating power of the gas.

That corporations of all kinds were at that time simply treated as orphans and neglected by their parent, is proved by the fact that the legislatures of some of our best governed states often forfeited the charters of from 800 to 1,500[1] corporations by a single vote because the corporations could not be found by the tax assessor. Imagination cannot go so far as to suppose that a state exercises any effective control over corporations of whose very existence it is in doubt. Broadly speaking, the only supposed means of enforcing the provisions of the charter was by suits before the ordinary courts, brought either by individuals or by the attorney-general. For obvious reasons both means were impossible of practical application; and the prohibitions and penalties might as well have been left out of the statutes.

[1] See Mass. Sen. Doc. 37, 1892.

Such, in brief, is the attempt to settle the relation of the gas supply to the public in all the American states except Massachusetts, save in the few, and, for our present purpose, relatively unimportant attempts at public ownership. In Massachusetts the case is otherwise.

The development of the gas supply in Massachusetts[1] offers one of the most interesting and instructive chapters in the development of the modern business corporation. In the first place, the corporation laws of Massachusetts have, from the beginning of this form of doing business, been much more strict in both form and administration than those of any other of our states. Therefore, excessive capitalization was less frequent and corporate abuses, generally speaking, less flagrant than elsewhere. For this reason the field was less enticing to the unscrupulous promoter and blackmailer. Hence there were fewer competing companies with their train of evils. In fact, until the present generation, competition was prohibited by statute until companies exceeded a fixed rate of dividend for a considerable number of years. It is needless to say that under that law, whatever the possibilities, under the circumstances, companies found it expedient to keep formally within the legal rate of dividend.

With the then existing ideas of administration and control, the state was not in a position to compel from companies thus protected, good managements or efficient service. The result was, if not unlimited, at least irresponsible monopoly. For some occult reason unknown to me, but probably as a result of the general popular outcry then rife against monopolies, the legislature, in 1870, repealed this partial prohibition of competition.

For about a decade thereafter, the city government of Boston, which, according to the almost universal American custom of the time, had, under the authority of the legisla-

[1] A detailed history of the Boston gas supply has been published by the present writer in the "Quarterly Journal of Economics" for July and October, 1898, and April and November, 1899.

ture, power over the question of competition in that city, refused to admit a competing company.

But so soon as the holders of water-gas patents gained considerable confidence in the value of the new processes, circumstances suddenly changed. No American city council could possibly stand out against the attacks and allurements of the promoters of water-gas processes. There were in the early eighties not less than six companies supplying gas within the limits of Boston. The exact extent of the respective portions of the city in which these companies might act has never been determined. Some of the companies, beyond question, had rights throughout the whole city. Some had come into the city only by annexations of territory. But whatever their legal rights, two of them—the Charlestown and East Boston—are cut off from competing with the others by natural boundaries. The remaining companies had, in fact, never attempted to compete, but by agreement, each had confined itself to an exclusive portion of the field. The legislature has never specifically limited dividends of the gas companies of Massachusetts nor, save by implication in the Act of 1855, limiting competition, has it expressed itself on the question of what is a fair rate of dividend for a gas company to pay. But traditions are often stronger than statutes, and for many years there has been a well established tradition that a gas company is entitled to charge prices sufficient to keep up the company and pay an annual dividend of 10 per cent on the capital actually contributed by the stockholders. Any attempt within recent years to pay more than this regularly, or to water the stock, has always irritated the public and in a short time usually got the company into trouble.

About 1880, when the new processes began to press for admission, the population and wealth of Boston, with the consequent increased demand for gas, caused a genuine embarrassment of riches to the Boston company, and the other larger companies in Massachusetts. Companies so situated

had for years, with secrecy of affairs and traditional prices, been able, from their annual earnings, to pay a 10 per cent dividend, increase their surplus and meet all reasonable demands for extension of manufacturing plant and distributing system. Being restrained by specific statute as well as tradition from stock watering, and not wishing, for obvious reasons, to reduce the price of gas, they suffered from abundance of earnings.

The condition of the Boston company was typical of that of all the stronger companies in the state wherever the companies had not evaded the stock-watering statutes. The Boston company from 1877 to 1892—fifteen years—put into new investment out of its earnings an amount equal to 9 per cent of its share capital, annually, met all its legitimate expenses, and paid 10 per cent dividend. At the end of this period, the company, although probably greatly underassessed, paid taxes on $4,129,900, with a total capitalization of $2,500,000. In like manner all the gas companies of the state, with a total capitalization (stock and bonds) of $11,731,850, were valued for taxation at $12,189,768.

What a bonanza this, for any one who could overcome or evade or violate with impunity, the laws against stock watering! If an irresponsible monopoly, without any discoverable motive for enterprise, could, by old processes, earn about 20 per cent per annum, what could not be accomplished by the introduction of the much more economical, and to the populace little known, water-gas processes, especially if, at the same time, all the companies about Boston could be combined!

Such was the stake for which Mr. J. Edward Addicks began to play shortly after 1880. He met first the hard fact that Massachusetts was opposed to the consolidation of gas companies and that the statute (of 1880) defining the purity of gas, effectually barred the use of water-gas. This, with the virtual limitation of dividend to 10 per cent, and the actual prohibition of stock watering, might have deterred a less determined spirit.

The methods by which Mr. Addicks organized, under the general law, the Bay State Gas Company, of Massachusetts, in 1884, with the maximum legal capital of $500,000, forced an ordinance through the council allowing him to parallel all the gas pipes in Boston in spite of all opposition; and then, despite statutory prohibitions and traditions against stock and debt watering, bonded the company for nine times its share capital, awoke the old companies, if not the populace.

That the statute against water gas did not frighten Mr. Addicks in the least, was shown by the fact that he proceeded to spend millions of dollars in constructing a water-gas plant, just as if the statute had never been passed. The old companies, which had not been so shaken up for thirty years, suddenly changed their attitude entirely on the legality and expediency of state interferences, and consequently on the private character of their business. Almost with one accord the companies of the state, under the leadership of the Boston company, combined in seeking the protection of the state against threatened competition. The companies, in the face of such danger, were willing to submit to control in return for a guarantee against competition. This move was started against the Bay State Company before that company effected an entrance into Boston. But Mr. Addicks had his forces well in hand, and got his ordinance, before the act creating the gas commission[1] went into force in June, 1885.

As the circumstances under which this commission was created were extraordinary, so the powers granted it were the most plenary ever given over any industry to any commission in this country.

Mr. Addicks, after many vain attempts to get legislative authority to consolidate all the companies in Boston and vicinity, organized a syndicate, bought nearly all the shares of the Boston, South Boston, and Roxbury companies, put

[1] The act is entitled "An act to create a board of gas commissioners." For the sake of brevity, I shall refer to the board as the gas commission.

these shares and those of the Bay State Company of Massachusetts in trust as security for the payment, principal and interest of twelve million of Boston United Gas Bonds issued by a New Jersey company, which afterward assigned to the Bay State Gas Company of Delaware—to which reference has already been made. When, therefore, Mr. Addicks had completed the large water-gas plant in Boston and got permission from the legislature to sell water gas, he found himself in control of these four large companies, whose stocks of about $5,000,000 were in trust, and in control, also, of the purely financial or promoter's company, the Bay State Gas Company of Delaware. This Delaware company owned the $4,500,000 obligation—an income bond entitled to nine-tenths of the earnings of the Bay State Company of Massachusetts—and the equity in the four Boston companies whose stocks were pledged for the payment of the $12,000,000 of Boston United Gas Bonds. The companies were managed as a unit, the gas for them being largely manufactured in the new works of the Bay State Company of Massachusetts, and sold to the other companies for distribution.

The saving in administration was very great, while the effectiveness of the new water-gas process probably exceeded the expectations of its sanguine promoters.

The harvest, therefore, seemed complete. The income bond for $4,500,000, which was largely water, received its 10 per cent per annum from the apparently tripled earnings of the Boston gas field. This remarkable result was achieved with a great improvement in the illuminating power of the gas, and with virtually no increase in price—although some slight discounts to a few large consumers were discontinued.

But this condition of affairs was not to last long. As in 1884 the field with its old processes, high prices, and great surpluses, had offered an irresistible temptation to the speculator and manipulator, so this prosperous condition appeared too valuable to be let alone by the public official with his eye ever on the popular vote.

On the plausible ground of excessive charges and enormous profits from an illegitimate monopoly, the then Mayor of Boston attacked, in 1893, the Bay State Gas Trust before the legislature and the gas commission, simultaneously, charging besides excessive prices, violation, or evasion of the law, in virtually consolidating the companies, and especially in issuing the four and a half million income bond for little or no consideration.

To compel favorable action on his petition by the legislature and the commission, the mayor, by a shrewd interpretation of the complex statutory powers of the municipality—an interpretation which technicalities have prevented the courts from passing upon—permitted a suburban company, the Brookline, then under control of the Standard Oil interests, to parallel all the gas pipes in Boston at its discretion. The Brookline Company agreed to furnish gas for both public and private use at prices much below those charged by the Bay State companies, and presumably much below actual cost to the Brookline Company itself.

This was a telling stroke, one that could not be successfully resisted by any department of government. The result of this attack was that the commission ordered a large reduction in the price of gas furnished by the Addicks' companies, while the legislature, under threat of forfeiture, squeezed $3,000,000 out of the capitalization of the Bay State Company of Massachusetts—causing the cancellation of the $4,500,000 obligation, or bond. Could the reduction of price and of capitalization have been effected without admitting the Brookline Company to Boston, the results might have been wholesome. As soon after the admission of the Brookline Company to Boston (February 27, 1893) as pipes could be laid, the first actual competition between gas companies in Boston began. This competition went on till May, 1896, when the Brookline Company had nearly two hundred miles of pipes in the best portions of Boston. The contest more than destroyed all dividends of the Brookline Company and

required the holders of the equity in the Bay State companies to raise large sums from outside sources to maintain the trust.

The agitation and investigations of 1893 convinced every one that the possibility of issuing the $4,500,000 obligation had opened the way to manipulate the Boston Company. Therefore, the legislature was not satisfied with merely destroying that obligation, but wished, also, to make such issues impossible in the future. Until the entrance of Mr. Addicks to the Boston field, it was supposed that the statutes against stock watering effectively prevented such issues. By two acts of 1894, known as the anti-stock-watering acts, it is made illegal for any gas company to issue any stocks or bonds for any purpose except on conditions and for purposes approved by the commission, after a public hearing. While there are some grave dangers in these acts, they are, probably, taken all in all, the two most effective acts ever passed in this country to check corporate abuses. They, perhaps, place a greater burden on the commission, both as to work and discretion, than our government organs have usually proved themselves able to bear.

The commission has from its origin had complete powers of inspection over all the companies in the state—powers that can be delegated to experts. It also compels companies to keep their books and make their reports on a uniform system prescribed by the board. It has also had complete power over the price and quality of gas, save that initiative in regard to price and quality rests exclusively with consumers or the local public authorities.

As the desire to introduce a new process was the prime motive of Mr. Addicks in going to Boston in 1884, so in 1896, the possessors of patents for the so-called coke-oven process entered upon a remarkable struggle for admission to the Boston gas field. The appeal was made direct to the legislature for privileges by special act and for permission to consolidate all the existing companies and to contract with them at will for the sale of gas to them.

If the campaign of Mr. Addicks, from 1884 to 1893, changed the whole character of the Massachusetts Legislature, the appeal of Mr. H. M. Whitney and his friends for an opening for coke-oven gas in 1896 revolutionized legislative methods. This struggle took place during the most bitter competitive strife of the existing companies.

In spite of the advice of the gas commission (which had long before come to consider itself the expert arm of the legislature) and in spite of the united opposition of all the old companies, the charter of the Massachusetts Pipe Line Company was granted to the promoters of coke-oven gas in June, 1896.

Although it was impossible to prevent the granting of this charter, the opponents of the measure succeeded in amending the bill in such a manner as to make it seem inexpedient for the incorporators to undertake directly either consolidation or stock watering under it. Presumably Mr. Whitney believed that the new processes would work a genuine progress in the manufacture and sale of gas, but the facts show that his faith did not extend to the point of making him willing to undertake the experiment with his own capital. For, whatever the outcome may be, the venture was and is a hazardous experiment. Furthermore, with the limitation of dividend on actual investment to 10 per cent the possible gains were not a fair compensation for the risk involved. The Massachusetts Pipe Line Company was, much against the will of its promoters, placed under the jurisdiction of the gas commission, and especially under the anti-stock-watering acts of 1894.

It seemed for the moment as if the laws of Massachusetts against consolidation of corporations, leasing or selling of franchises and stock-watering had put a stop to industrial experiment with other people's money, and as if the world would have to wait longer for coke-oven gas. The owners of the new charter did not organize the company for more than a year. Meantime, they combined their forces with the Standard Oil holdings in the Brookline Company.

In May, 1896, the competition between the active companies ceased, by an agreement of the Addicks interest to buy out the opposition. But upon the failure of Mr. Addicks to raise the purchase money he was obliged to permit the management of all the Bay State companies to pass to his great rival in November, 1896. Those in control of the Brookline Company had already bought substantially all the shares of the Dorchester and Jamaica Plain companies.

These united forces then worked out what seems to me the most unique scheme to evade the corporation laws of a state, which can be found in all industrial history. They organized the New England Gas and Coke Company, a voluntary association. The articles of association embody all the essential provisions of limited liability found in the corporation laws. The association thus has the advantages of a corporation and escapes the dangers of partnership liability, the exclusive management of the property being in the hands of trustees. The ownership is represented by shares of the nominal value of $100 each. These shares were authorized at once to the nominal amount of $17,500,000 and a loan of $17,500,000 was also authorized. Of course, there can be no limit to the capitalization of such a voluntary association in the shape of either bonds or shares, except the refusal of the public to advance money on them. Furthermore, the financial and industrial management of the enterprise are both placed substantially outside of the supervision or control of the public authority until legislation is radically changed. For tradition and legislation have been directed against corporations on the ground that they are artificial bodies, with special privileges, created for the public good, and therefore subject to regulation in the public interest.

But let us return to the financial operations of the Coke[1] Company. With the proceeds of the $17,500,000 loan,[2]

[1] I shall for the sake of brevity refer to this voluntary organization, The New England Gas and Coke Company, simply as the "Coke Company."

[2] $3,500,000 par value of this loan was reserved to raise working capital, and $14,000,000 par value used for the purposes indicated here.

substantially all the stock ($2,000,000) of the Brookline Company, the Dorchester Company ($519,000), Jamaica Plain Company ($250,000), and the Massachusetts Pipe Line Company ($1,000,000), $1,615,000 of the debt of the Brookline Company and $1,000,000 (par value) of Boston United Gas bonds were purchased.

In addition to this, from the same source, the owners bought the land for and built the mammoth coke and gas plant at Everett. All these stocks ($3,505,800 par value and bonds ($2,615,000 par value), and all the manufacturing plant and other property of the association, were placed in trust to secure the loan of $17,500,000 from which the purchase money for all the property put in trust was raised.

The Coke Company not being a corporation, and being virtually exempt from supervision, nobody but the trustees of the association know how much investment the plant represents. Interested parties wish the public to believe that the combined plants of the Pipe Line and Coke companies cost $5,000,000. The Pipe Line Company is merely a go-between, being neither a manufacturer of gas nor a seller of gas to consumers. It merely furnishes a means of legal connection between the manufacturing plant of the Coke Company, which has no franchise or license, and the holders of the gas companies. On the one hand, the Coke Company makes contracts for the sale of gas to the Pipe Line Company, which is all owned by it; on the other hand, the Pipe Line Company sells gas to the old gas companies controlled by the same parties that control both the Coke Company and the Pipe Line Company. These old companies which are corporations subject to supervision become simply distributers.

The Coke Company is actually delivering gas under these peculiar circumstances—the same persons representing both sides in each of these contracts.

This statement shows how difficult control is, and that the theory of control breaks down at a point to which

attention has been little called. In fact, when commission control of corporations of any kind, and more especially of gas companies, was first seriously considered, there was apparently a well-grounded fear that the system might fail, first, from a deliberate and conscious misuse of the appointing power either by unfit appointment in the beginning or by frequent removals for partisan causes; second, that the commissioners, although honestly selected, would be corruptly influenced by the corporations under their control. Such an outcome in many of the states seems to me still possible. But so far as Massachusetts is concerned, these fears have proved perfectly groundless. Fairly good men have always been appointed on the gas commission; no member has ever been removed for any cause whatever; with but a single exception,[1] in fifteen years, no man who wished reappointment has failed to receive it. So that the members have actually remained on the board long enough to acquire a considerable degree of expert skill and experience such as ought to be of great value to the state. No serious charge of acting from any improper motive has ever been made public against the board as a whole or any one member of it.

At first blush, therefore, it would seem that commission control has been tried in Massachusetts under very favorable conditions. On the other hand, the most ardent advocate of this form of control could not, for a moment, maintain that the relation of the gas supply to the public in Massachusetts is at present reasonably satisfactory.

If, then, the system has not exhibited any of the evil results anticipated at the beginning, and, if the sum total of results has been disappointing, what is the explanation of this peculiar condition of affairs?

This question brings us to the real gist of the whole matter, and makes it necessary to call attention to certain funda-

[1] The members are appointed for three years by the governor with the consent of the council, the governor designating the chairman.

tal dangers in our political and industrial life—dangers which are often referred to, but rarely followed to their results in the practical affairs of government.

It has become a stock saying that our municipal government is a failure. It has certainly proved to be so in the large cities, as far as the gas supply is concerned. A prominent remedy for this failure is sought in establishing a more permanent administrative force in our cities. In other words, the movement towards civil service reform and the concentration of power in the hands of the mayor is now the sovereign cure in the popular mind for existing evils. This popular tendency is probably worthy of encouragement. But so long as the office of mayor is not a professional one which satisfies the life ambition of the incumbent, and so long as partisanship on national party lines dominates municipal elections, we ought not to forget that the mayor has the same motives and temptations for playing politics, and appealing to the ignorance of the voter, that the members of the council had before the movement for this concentration of power set in.

The history of the gas supply of Boston in the last eight years will illustrate this point. In the last fifteen years, in addition to concentrating municipal power in the hands of the mayor, Massachusetts has attempted also to curtail municipal power by virtually taking the control of the gas supply and various other industries out of the hands of the municipality and putting it under the direct supervision of the state. Furthermore, in strict conformity to the predominant scientific theory of the day, Massachusetts, by the creation of the gas commission in 1885, also tried to take the gas companies out of the range of legislative interference and control, and to put them under a strictly administrative control. This was supposed to mark a great step forward at the time; and in my opinion it was a move in the right direction. However, the promoters of it did not take account of certain great difficulties in putting this

theory into practical operation. The advocates of state as distinct from city control, and of administrative as distinct from legislative control, did not fully realize that the same forces stampeded the Boston city council under the old city charter in 1885, and admitted the Bay State Company to Boston, carried the mayor off his feet under the new charter in 1893, brought in the competition of the Brookline Company, and granted the pipe line charter in 1896. So long as our political and economic conditions remain at all what they are now, these same forces will attempt first to stampede the commission. So far they have failed to break through the line at this point. But they have not given up the campaign on that account. It is theoretically possible for these forces to stampede the legislature and force it to abolish the commission, or to destroy its usefulness by changing its constitution, and by interfering with its discretionary powers to compel it to do or refrain from doing some specific thing. This outcome has been seriously feared at times in the history of the gas commission. But, fortunately, the fears have not been realized. But with the avoidance of this difficulty the whole battle is not won. There still remains at least one great chance for these forces to win. Namely, to ignore the existence of the commission so far as to appeal directly to the legislature for special rights and favors in the gas field, which rights and favors, consistently with the whole theory of commission control, ought to be granted only on the recommendation of the commission and enjoyed under the supervision of that body. It must not for a moment be forgotten that the legislature determines the constitution, powers, and duties of the commission and holds over it at all times the power of life and death. Therefore, the work of the commission cannot at any time exceed in skill and effectiveness the standard appreciable by a majority in the legislature. Furthermore, whatever may be the individual judgment or knowledge of the members of the legislature—if one can apply such terms

as individual judgment and knowledge to men in such position—all disinterested students recognize that legislative action will never, in our circumstances, rise in honesty, stability, or excellence much above the grade of intelligence, skill, and honesty set by the average voter. This brings us to the end of our reasoning. We have reached an ultimate limit. No stream can rise higher than its source. By no sort of machinery can a government resting on a basis of popular suffrage be better than is demanded by the majority of the voters. Nothing could better illustrate this great, this fundamental principle than the history of the relation of the gas supply of Boston to the public. If the gas commission has any worthy function or logical reason for existing, it is that it may act as a non-partisan expert body and more especially that the solid and constantly growing body of expert knowledge acquired by it shall furnish the *only* basis for future legislation. For any commission at the beginning is but an experiment, and in the early years can do no more than point the way. But if our reasoning in this case has been correct, we cannot expect the member of the legislature to want the advice of the commission, or to act upon it, until the constituents of the members are sufficiently educated to appreciate and demand such action. It certainly is clearly true to-day that members of the legislature act neither on their personal convictions nor on advice which, if they were not members of the legislature, they would consider expert, but rather on the basis of what is supposed to represent momentarily the somewhat evanescent and constantly shifting sentiments and desires of a majority of the voters. Unfortunately, this popular sentiment is not only by nature unstable and intangible under modern conditions, but it is far within the power of designing private interests to effect sudden changes in it at will. So long as this remains true, and so long as the framework of our government and our political practices remain substantially what they now are, so long will the managers of great corporations and industrial

enterprises continue to stampede the voters and lawmakers for private advantage.

Had it been impossible thus to manipulate public opinion in the eighties, the new processes, which were truly needed, could have been easily introduced by such administrative machinery as we have to-day. In like manner, the advantages sought by the introduction of the Brookline Company in 1893, and by the creation of the Pipe Line Company in 1896, could have been obtained. This company was chartered and the competition entered upon, against the judgment of the commission.

These are the three disturbing and injurious events in the history of the gas supply of Boston. They are not only results of the same cause, but are also a sufficient explanation of the creation of this voluntary association—the Coke Company. They explain, too, why the gas commission has not proposed any remedy for the evils threatened by the Coke Company. The commission knows all too well that it dare not take any position without giving a reason for it to the public, and that it is useless to give or allege any reason which will not instantly meet with popular support, and that, too, when every private and corporate interest which does not want the public to support that view is making every effort, legitimate and illegitimate, to prevent the public from accepting the view of the commission.

Could the commission be assured for five years of unbroken legislative, that is to say, popular support, it could, either under present laws or under amendments within the power and duty of the commission to suggest, control not only the corporations but also the Coke Company. That is, commission control is weak, because the commission is a sort of tenant at will of the legislature, and the legislature has no stable will or policy.

Let us consider the relation of the commission to the Boston situation to-day. Apart from the unlimited inquisitorial powers of the commission, it has three important functions.

First, it has complete power over the capitalization; second, it lets in or keeps out competing companies upon appeal; and third, upon proper petition it fixes the price of gas.

The policy of the state in favor of regulated monopoly has been so specifically declared by statute and rulings of the commission that it seems improbable that any competing company will in future be introduced by the commission. Until further legislation, the voluntary association in the form of the Coke Company has removed itself practically from the jurisdiction of the commission. The indirect power over the price charged consumers is apparently the only one remaining.

But the same power that removes the capitalization of the Coke Company from the jurisdiction of the commission, in practice destroys the power of the commission over the price of gas. The commission has not yet been able to get at the amount of the investment or the manufacturing accounts of the Coke Company. Until the commission knows what it costs to manufacture gas, how can it determine whether the prices charged by the Coke Company to the Pipe Line Company are reasonable? Could it do so, the only method of reaching the evil would probably be by lowering the selling price to the consumer. Had the commission access to the accounts of the Coke Company, however, it could have but a meagre basis for a sound judgment of the cost of manufacturing gas. For it should be recalled that gas in this case is really a joint, or rather, as already explained, a minor or by-product of the manufacture of coke. Therefore, its separate cost of manufacture cannot be determined by any one. What it costs to make gas depends on what it costs to make coke, and a fair price for gas depends on what the coke brings.

In short, the assumption of the form of a voluntary association instead of a corporation has carried the gas industry in Massachusetts, or at least in Boston and vicinity, practically back to where it stood throughout the whole country

thirty years ago. That is, we have unlimited and unknown capitalization, which in and of itself makes the determination of a fair price impossible. Then we have an experiment going on under the management of a group of men who, having none of their own capital invested, suffer nothing in case of failure, while being owners of the equity in the concern they get all the gains in case of success. But it may be asked, has not the commission power over the price of gas sold to consumers (if not over the price of inter-company sales), and can it not reach the difficulty by simply fixing a price which is fair to the consumers without regard to the manufacturers of, or dealers in, gas? This would seem possible at first sight, but under present conditions it is impossible. In the first place, the price fixed must be a reasonable one or the courts will not uphold it. But it goes without saying that the commissioners cannot strike in the dark, and they cannot get at the data necessary for a sane and certain judgment any more than the council or legislature could do so a generation ago. But if the commission could get at the investment and manufacturing accounts of the Coke Company and should find that the new process cannot be operated at a profit at prevailing prices, what could it do? For the commission from its origin has held that no experiment ought to be tried until its success is probable enough to induce the promoters to risk their own capital in the enterprise. On this principle the commission opposed the investment of the Coke Company on its present basis. Should, therefore, the Coke Company by amendment of the law be placed as fully under the jurisdiction of the commission as the gas corporations are, what would be the duty of the commission in view of the past history of the company in case the experiment bade fair to fail?

But even a greater practical difficulty is, that the evil has already been done, and the $12,000,000 of Boston United Gas bonds, the unlimited and unknowable amount of the stock of the Bay State Company of Delaware, and other

extra-Massachusetts securities, as well as the $35,000,000 stock and bonds of the Coke Company have, in large part, long since passed to unknown, and presumably innocent, hands. Is any American state government strong enough to-day to freeze out the holders of any considerable portion of this vast amount of securities—securities which, until the courts rule otherwise, must be assumed to have been legally issued? In my opinion, any such reduction of capitalization to become possible, must have back of it a judicial determination that these securities were not legally issued. Such a decision in this case seems at least improbable. I venture the prediction that, however great the violation of public policy or the moral law in issuing these securities, so long as those who issued them or those who hold them can put forth a truthful claim that the securities were legally issued, no administrative commission can, by its ruling, destroy them without having that ruling tested in the courts and probably annulled. At any rate, the attempt so to destroy the value of such securities would probably destroy the commission. Nor, in my opinion, will the legislature knowingly undertake to destroy these securities under its rights to repeal charters. The support of this excessive capitalization appears, therefore, to be saddled upon the consumers of gas, except in so far as the managers of the companies may by their strife among themselves bankrupt one or another of the companies, or procure a judicial decision that will bring about the same result. For reasons already given, the commission must, to maintain itself in popular favor, be perfectly sure of every step it takes, and be able instantly to justify that step to the public. But if it had perfect access to all the books and records of all the companies so long as the inter-company contracts exists and are entered into and changed at will by men who in each case are making contracts with themselves, one cannot presume that the commission will ever get permission to make expenditure enough to enable it to keep up with the hide-and-seek

game played by those in control of the industry, or to audit the accounts of the different corporations all kept by the same men, often enough or with sufficient care to have any confidence in a judgment based on them or to presume to justify that judgment to the public. It is utterly impossible for any public authority in Massachusetts to say what a fair price for gas in Boston is.

It should also be remarked that, apart from the secrecy, the excessive capitalization, the inter-company contracts, which the same set of men make with themselves, more than 98 per cent of the stocks in all the Massachusetts corporations involved are in possession of one or the other of two New York trust companies as security for a portion of this foreign and excessive domestic capitalization. If one should so far stretch language as to speak of a fair price for gas under these circumstances, one should realize that any fixing or public interference with price might easily wreck the whole legal complexus on which the business now rests. For reasons already given, the commission cannot be sufficiently sure of its facts to justify it in entering upon a course likely to bring about such a collapse. When one cannot even tell who is an innocent holder, one may well be a little slow in trying to strike a deliberate blow at any holder. In short, the object of those who brought about the present complexity was to produce a condition in which a price that is fair for one interest involved should necessarily be unfair to some other interest. Nothing short of legal consolidation can possibly simplify this situation. But the difficulties of determining a fair price turn out to be, viewed from another standpoint, exactly the same difficulties as those presented in distributing equitably the stock in a consolidation among the different parties in interest.

Enough has now been said to show the weakness of the present condition of control of gas companies in the only state which has made any serious attempt to exercise a public control over them. The question naturally arises,

does this account demonstrate the impossibility of control and drive us inevitably, however reluctantly, to the advocacy of public ownership and operation? In my opinion neither of these conclusions is completely justified, while I see no evidence whatever in the facts surveyed to indicate that public ownership is more likely to succeed than public control. In fact, the lesson of the whole story to me is, that the evils are more deep-seated than the form of ownership resting on the ignorance of the mass of voters in regard to both government and industry. That ignorance rests upon an utter lack of appreciation of the complexity of modern industrial conditions and a complete absence of any popular apprehension of expert knowledge, or its value to its owner or the public. One manifestation of this ignorance gives us the 10 per cent dividend limitation in Massachusetts. I have not time to elaborate the effects of this superstition, but wish simply to remark that, as long as that tradition holds, one of two things will result. The laws enacted to enforce this view will either be violated or evaded, as is now done, or all progress in industry must cease. While an annual dividend of 10 per cent is an ample reward in a reasonably safe investment which has passed the experimental stage, a chance of that amount as a maximum is in no sense a sufficient inducement to lead men to risk their own money in an enterprise involving a large amount of fixed capital so long as there is great danger of a total loss of principal as well as dividend by a failure of the experiment. The consumer ought, in the long run, to pay the expense of legitimate industrial experiment. He does not do this when he enforces successfully the 10 per cent dividend limit.

The very thing, therefore, which has caused commission control to yeld such meagre fruits in Massachusetts would be sure to make public ownership give still less desirable results. But has commission control been so complete a failure as to cause us to despair of the whole problem? This is too large a question to enter upon here. Suffice it to say

that to despair here is to despair of all self-government as we understand that phrase. I venture the prediction, however, that if the problem is capable of solution, it must be settled along the lines of the work of the Massachusetts Gas Commission. For if my diagnosis of the evils to be eradicated and of the difficulties encountered by the commission is correct, it follows that the difficulty comes ultimately from the dependence of the commission upon the ignorance of the voter. It follows necessarily that the only possible remedy is the political, administrative, and industrial education of the voter and through him of the legislator.

Any one who has followed the history of this commission is drawn irresistibly to the conclusion that, however far short that body may have come of the desired results, it has followed the only logical, or, in fact, rationally possible, method for the attainment of those results. In my opinion, the hope of the future lies in patiently improving and perfecting the educational work of administrative control, with its uniform bookkeeping, accounting, and public inspection. If this fail ultimately, we shall of course try something else; but I for one shall come to believe with Cyrano de Bergerac that "one does not fight because there is hope of winning," and, that, "it is much finer to fight when it is no use."